Dear Selection Committee of the Winter Meeting of the NBER Economics of Digitization Group,

I am writing to apply to participate in the Economics of Digitization tutorial for economics graduate students. My name is David Holtz, and I am a 2nd year PhD student in the Information Technology group at the MIT Sloan School of Management, where my advisor is Professor Sinan Aral. At a high level, my research interests center on the design and analysis of online marketplaces. More specifically, I am interested in topics such as the ways that reputation system design impacts economic outcomes for marketplace buyers and sellers, the welfare implications of price-setting and match-making algorithms, the extent to which marketplace design and novel technologies can reduce discrimination, and the development of methodologies that lead to more accurate causal inference in competitive environments (where SUTVA is often violated). The winter tutorial for economics graduate students seems like an excellent opportunity to become better acquainted with the existing research and learn directly from some of the best researchers in this emerging field. I would be thrilled to participate.

A large portion of my coursework thus far at MIT has focused on economics and econometrics. In the economics department at MIT, I have completed the introductory graduate microeconomics sequence (which includes coursework on microeconomic foundations, general equilibrium, game theory, and contract theory) and the introductory graduate econometrics sequence, as well as courses in behavioral economics and industrial organization. Outside of the economics department, I have completed courses in machine learning, information theory, experimental design, applied network analysis, and the economics of digitization. Over the next year and a half at MIT, I intend to complete additional courses in industrial organization, econometrics, applied machine learning, and behavioral economics.

I currently have a number of research projects in progress, almost all of which have the potential to serve as eventual dissertation chapters. Over the past two years, I have worked with Andrey Fradkin (a postdoctoral associate at MIT Sloan) and Elena Grewal (interim head of data science at Airbnb) on a paper that leverages experiments conducted on Airbnb to identify factors that may lead to reduced informational content in online reviews. Recently, I have also been working on a project investigating the use of experiment analysis and design techniques for inference on networks to reduce test-control interference in online marketplace experiments. I presented an early version of this work at the 2016 Conference on Digital Experimentation, and will also present it at the 2016 Workshop on Information Systems and Economics. I spent this past summer at Facebook researching how network structure establishes trust (and facilitates transactions) in informal marketplaces under the supervision of Diana Maclean (a Facebook researcher) and Professor Sinan Aral. Finally, I am in the early stages of a research project with Professor Sinan Aral studying the extent of gender discrimination in the software engineer job market (and to what degree it can be reduced through the use of voice modulation technology in online hiring marketplaces).

As I embark on my research career, I have no doubt that attending this program would be enormously beneficial. I'm grateful for the opportunity to apply, and would be honored to attend. Thank you for your consideration.

Sincerely,
David Holtz

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